

An Internet-based Patient Interview

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A computerized patient interview has been developed at the Beth Israel Deaconess Medical Center to supplement or replace the paper questionnaire given to patients before an outpatient visit.¹ The interview was designed to obtain an overview of the patient's clinical condition in approximately 30 minutes of the patient's time. This demonstration will show our redesign and implementation of the interview on the world wide web.

The patient interview covers a wide variety of clinical topics, including skin, occupational hazards, respiratory health, blood, stomach and intestines, endocrinology, neurology, bones and muscles, tobacco use, substance use/abuse, alcohol, caffeine consumption, alternative therapies, psychiatry, ear, nose, throat, and eye health, cardiovascular health, prevention and safety, and reproductive health.

Patients may identify themselves by hospital id number or by name and password. Patients may complete the sections of the interview in any order, or they may follow a default order if they prefer. The interview has been designed to encourage patients to complete all the questions in a section before proceeding. Patients may leave the interview at any time and log in later to complete it. Questions presented to patients take account of information known about the patient and answers already given. For example, women are presented a different set of reproductive health questions than men, and patients who report that they do not use tobacco are not presented detailed questions about tobacco use. There is a list of hot links at the end of each section to web sites that provide related patient-oriented information.

The web pages are generated dynamically from template HTML pages that the system fills in when the patient retrieves the page. The patient's responses are stored in a server relational data base that includes the patient ID, the time each answer is received, and each answer provided. Answers are stored in a format that does not require knowing the questions. This approach allows the web pages to be maintained easily, and permits retention of a history

of the patient's responses over time, even though the format of the web pages may have changed.

The pages include a small number of questions per page, usually no more than four, and usually do not require scrolling. A question may concern a body part or a time period (e. g., *Do you have any of the following mouth problems?*) and is followed by a set of related answers with checkboxes for the patient to check off (*teeth that hurt, teeth that are sensitive to heat or ice, teeth that are in poor condition, gums that hurt or bleed easily, sores in your mouth*). This approach allows the patient to review the alternatives before answering, and simplifies the collection of information on related symptoms and experiences. Questions and answers follow a standard text format and are worded as simply as possible. Backgrounds are kept simple with occasional use of graphic icons and colored regions.

The system generates a text summary report of the patient's clinical condition based upon the answers given, geared to the use of a primary care provider. The report includes an overall health rating, a narration of the answers given to each topic section over time, any sections that the patient has left unanswered, and a computed score on the Alcohol Use Disorders Identification Test (AUDIT) to identify potential for alcohol abuse.²

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References

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